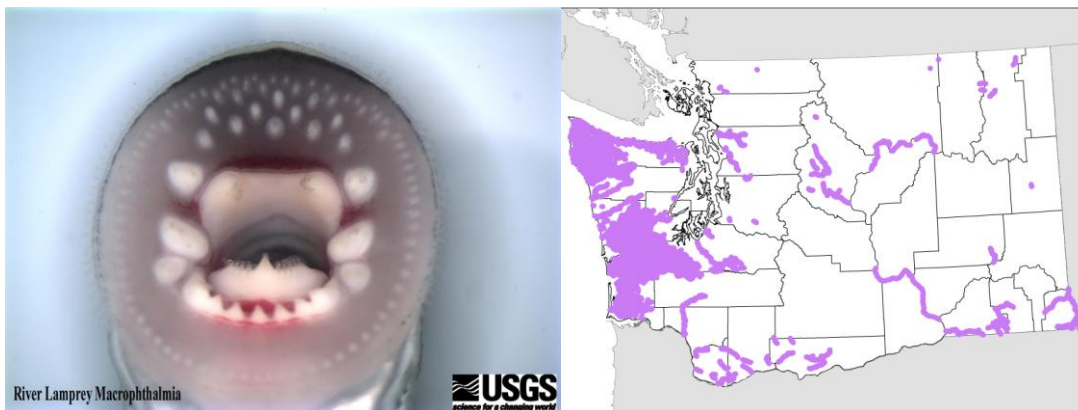


# Species Fact Sheet

## River lamprey

### *Lampetra ayresii*



#### **STATUS: SPECIES OF CONCERN**

River lamprey potentially occur in these Washington counties: Douglas, Okanogan, Chelan, Grant, Kittitas, Yakima, Benton, Franklin, Walla Walla, Columbia, Garfield, Asotin, Klickitat, Skamania, Cowlitz, Wahkiakum, Pacific

*(Map may reflect historical as well as recent sightings)*

On January 27, 2003, USFWS received a petition to federally list river lamprey, *Lampetra ayresii* in Oregon, Washington, Idaho, and California as threatened or endangered under the Endangered Species Act. In 2004, the USFWS found that the petition did not provide the required information to indicate that listing the species may be warranted and therefore a status review was not initiated.

### ***Current and Historical Status***

River lampreys are found from just north of Juneau, Alaska, to San Francisco Bay in California. However, detailed information on their distribution and abundance is lacking. River lampreys are associated with large river systems such as the Fraser, Columbia, Klamath, Eel, and Sacramento Rivers. Beamish (1980) and others have noted that river lamprey appear to be concentrated only in particular rivers, and only in the lower portions of these large rivers. The river lamprey is genetically and

morphologically similar to western brook lamprey (*L. richardsoni*), which overlaps in range and is an exclusively freshwater nonparasitic form. Available information on the abundance of river lamprey indicates some potential local declines, but data are lacking to substantiate a significant decline in abundance or distribution of river lampreys.

In Washington this species probably historically occurred in most major rivers. Morrow (1980) stated, without documentation, that the river lamprey “does not appear to be particularly abundant anywhere within its range.” The current distribution of river lamprey includes rivers and streams along the coast from the mouth of the Columbia River to the mouth of the Hoh River, throughout Puget Sound, and in the Lake Washington basin, but not on the Olympic Peninsula. Two records (1931 and 1959) of river lamprey in Lake Cushman suggest this lake may have once supported an adfluvial (lake dwelling) population. River lampreys occur in the Columbia River and have been documented in the Yakima River basin.

## ***Description and Life History***

Lampreys are a primitive group of fishes that are eel-like in form but lack jaws and paired fins. These species have a round sucker-like mouth (oral disc), no scales, and breathing holes instead of gills. Adult river lamprey have two teeth (cusps) and no posterior teeth on the oral disc. They average between 7 and 12 inches in length and are dark on the back and sides with silvery yellow on the belly and dark pigmentation on the tail. Pacific, river, and western brook lamprey ammocoetes (larvae) are nearly indistinguishable from each other.

Little information is available on river lamprey life history. According to Moyle (2002), their life span is 6 to 7 years. Adult lampreys spawn in gravel bottomed streams, at the upstream end of riffle habitat. Both sexes construct the nests, often moving stones with their mouths. River lampreys lay 11,400 to 37,300 eggs per adult female. Adults typically die after the eggs are deposited and fertilized. After the eggs hatch, young ammocoetes drift downstream to areas of low velocity and silt or sand substrate. They remain burrowed in the stream bottom, living as filter feeders on algae and detritus for 2 to 7 years. Metamorphosis from the ammocoete to macrophthmia life stage occurs between July and April. At this time, macrophthmia are thought to live deep in the river channel, which may explain why they are rarely observed. As adults, their oral disc develops just before they enter the ocean between May and July. During the approximately 10 weeks they are at sea in the parasitic phase, they remain close to shore, feeding primarily on smelt and herring near the surface. After the adult feeding phase, river lamprey migrate to spawning areas and cease feeding. Their degree of fidelity to their natal streams is unknown.

## ***Habitat***

Riffle and side channel habitats are important for spawning and for ammocoete rearing. Because lamprey ammocoetes colonize areas and are relatively immobile in the stream substrates, good water quality is essential for rearing. Adults feed in nearshore marine and estuarine habitat.

## ***Reasons for Decline***

Potential threats to river lampreys include artificial barriers to migration, poor water quality, harvest, predation by nonnative species, stream and floodplain degradation, loss of estuarine habitat, decline in prey, ocean conditions, dredging, and dewatering.

## ***Conservation Efforts***

Many Tribes, State, and Federal agencies are now beginning to incorporate the needs of lampreys into management and monitoring plans. For example, the Army Corps of Engineers has funded many studies to improve lamprey passage at dams. Currently there is little systematic monitoring of abundance and distribution of this species.

The USFWS encourages interested parties to continue gathering information to increase our understanding of the status of this species on such topics as:

- (1) River lamprey biology and ecology, their current and historical distribution and abundance, and habitat needs during all life stages;
- (2) The range, status, and trends of this species;
- (3) Specific threats to this species or its habitats;
- (4) Techniques for improving identification of lamprey ammocoetes to species;
- (5) Any other information that would aid in determining population status, trends, and structure;
- (6) The adequacy of existing regulatory mechanisms to protect or conserve lampreys and their habitat.

## ***References and Links***

[90 Day Finding 2004](#)

[Pacific Lamprey Conservation and Information](#)